

The Europa Orbiter mission is currently planned for launch in 2008. Europa exploration goals are derived from information from the Voyager fast flybys in 1979 and the multiple close encounters during the Galileo mission from 1996-2000. Numerous lines of evidence and theoretical arguments suggest that Europa may have a global subsurface liquid water ocean beneath its primarily icy crust. Key questions for future planetary and astrobiological exploration of this satellite are: Is there still an ocean at the current epoch? How thick is the icy crust and how variable is it? How old is the current surface and how recently has material from the ocean reached the surface? To address these and other Europa science issues, a Science Definition Team (chair: C. Chyba) recommended an orbiter mission with at least a 30 day mission lifetime capable of measuring Europa's tides and observing the surface with remote sensing instruments and possibly an ice penetrating radar for subsurface exploration. Current mission status and plans will also be discussed. This work was done at Caltech's Jet Propulsion Laboratory under a contract from NASA.